Allergy Abstracts

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Asthma and Hay Fever

Some Views on the Aspirin-Hypersensitive Allergy Group. Salén, E. B., and Arner, B.: Acta Allergologica **1**: 47, 1948.

Two groups of patients were studied. Group A consisted of 291 patients with bronchial asthma. Most of these patients were in the older age groups and the majority of them were complicated by secondary infections. Group B consisted of 1,173 patients who were under observation for seven years. Most of these patients were in the younger age groups. Twenty-nine (10 per cent) of Group A were aspirin-sensitive, and twenty-seven of these belonged to the "infection-complication" group. Another 76 per cent of Group A were also classified in the "infection-complication" category but had no aspirin allergy. In group B, 106 (9 per cent) were aspirin-sensitive. In this group, sixty-seven were analyzed and a definite infection could be demonstrated in fifty-six. There were six patients with purulent sinusitis in the twenty-seven (Group A) aspirin-sensitive cases and forty patients with purulent sinusitis in sixty-seven (Group B) aspirin-sensitive cases. Polypi were frequently present in the latter group. The authors recommend radical treatment of purulent sinusitis in these aspirin-sensitive cases and careful aftertreatment combined with antiallergic measures. Aspirin hypersensitiveness was rarely seen under the age of ten.

Thirty-four per cent of the aspirin-sensitive cases showed positive cutaneous reactions to allergens, as compared with 51 per cent in the nonaspirin-sensitive infectious cases. Hence, aspirin-sensitive cases, when infected, should be tested and studied allergically. The aspirin-sensitive group should not be classified in a special category because these patients differ only in degree from the non-aspirin-sensitive cases. A poor prognosis is not justified in this group unless the infection proves resistant to treatment with sulfa drugs, penicillin, and non-specific measures followed by radical sinus treatment, polypectomy, and after-treatment. Tuberculin treatment is contraindicated in these patients. They also usually show an intolerance for morphine. H.

Use of Intermittent Positive Pressure Breathing Combined With Nebulization in Pulmonary Disease. Motley, H. L., Lang, L. P., and Gordon, B.: Am. J. Med. **5**: 853, 1948.

Intermittent positive pressure breathing, applied by means of a pneumatic balance-type respirator in conjunction with a nebulizer, is highly efficient in delivering aerosolized solutions to the alveolae. The apparatus described was effectively used with aerosolized Neo-Synephrine. In the treatment of silicosis, emphysema and dyspnea, penicillin was added when indicated. Attacks of bronchial asthma were quickly relieved by the combination of nebulized Neo-Synephrine and Isuprel. Severe acute attacks of bronchial asthma could not be treated with this apparatus because the instantaneous flow rate was insufficient. It could, however, be used after the asthmatic patient had been sedated or the acute attack had subsided. F.

Convulsions Following Epinephrine. Report of a Case. Seltzer, A.: Ann. Allergy **6**: 153, 1948.

A 26-year-old white man with asthma and vasomotor rhinitis developed a series of generalized tonic and clonic convulsions ten minutes after the administration of a dose of allergenic extract and 5 minims of epinephrine (1:1000). The seizure lasted about thirty minutes. Similar episodes followed the administration of epinephrine on other occasions, especially when the patient had previously taken ephedrine. Physical examination and laboratory data were essentially normal. Following the administration of epinephrine, the rate and depth of respirations continued to increase until there was marked hyperventilation followed by a convulsion. The convulsions were considered to be a form of hyperventilation tetany. E. W.

Pathology of Pulmonary Fibrosis Including Chronic Pulmonary Sarcoidosis. Mallory, T. B.: Radiology **51**: 468, 1948.

The pathogenesis of pulmonary fibrosis is discussed. In a review of 6,000 autopsies, the most common causes of pulmonary fibrosis (exclusive of tuberculosis, silicosis, and lipoid pneumonia) were found in order of diminishing frequency to be: (a) organized pneumonia, (b) healed necrotizing pneumonitis such as bronchiectasis and lung abscess, (c) interstitial fibrosis resulting from radiation pneumonitis, sarcoidosis, rheumatic heart disease, and Ayerza's disease. Organized pneumonia accounted for nineteen cases of pulmonary fibrosis, ten of which occurred in patients with chronic bronchial asthma. There were sixty cases of asthma in the entire series. The mechanism by which bronchial asthma delays resolution of the pneumonic process is not understood. It may mechanically impede drainage of the affected alveoli. Bronchial asthma therefore seems to be a factor in the production of pulmonary fibrosis. J. S.

A Case of Salvarsan Asthma Accompanied by Joint Troubles Due to Lergitin. Sonck, C. A.: Acta Allergologica **1**: 191, 1948.

A female physician with a past history of infantile eczema and asthma developed severe bronchial asthma whenever she was in contact with Salvarsan. She had been free of asthma for twenty years. The accidental contact of a skin abrasion with Salvarsan resulted in violent asthma, angioedema of the face, pruritus of face and anus. The mere opening of an ampule produced asthma. Neosalvarsan produced the strongest reaction and asthma also followed contact with Neo-Halarsine (arsphenoxide-tartrate). Salvarsan produced a dermatitis and a positive patch test reaction.

Lergitin (N-dimethyl-N-benzyl-N-phenylethylene diamine) provided some relief of symptoms. Several months later, the administration of this drug for ten days was followed by painful, swollen, tender joints. These symptoms were correlated repeatedly with use of the drug. Benadryl, Pyribenzamine, and Antistine were well tolerated. H.

Mold Spore Counts in Outside Air in Copenhagen. Flensborg, E. W., and Samsoe-Jensen, T.: Acta Allergologica **1**: 104, 1948.

The moist lowland climate of Denmark coupled with a high incidence of positive cutaneous reactions to molds among children suggested the presence of a high atmospheric mold content. Using Feinberg's technique, Petri plates were exposed daily for a fifteen-minute period from March to September, 1947. Marked variations in the mold counts were noted. Hormodendrum was first observed in June and was present throughout the summer. Average counts consisted of 80 to 120 colonies daily. Hormodendrum constituted 72 per cent of all colonies present for the six-month period. Penicillium (9 per cent of all colonies) was in the air during April and May. Alternaria (2 per cent) was at its height in August and Pullularia (2 per cent) in July.

An interesting reference is made to atmospheric mold counts reported by Rostop in 1903-1904, which indicated that there was a mold season during the summer. H.

Asthma Due to Bacterial Allergy: Identified by Tissue Culture and Treated by Desensitization. Blatt, H., and Nantz, F. A.: Ohio State M. J. **45**: 40, 1949.

Bacterial sensitivity of the tuberculin type may produce bronchial asthma. The etiological organisms can be identified by means of a tissue culture test for bacterial hypersensitivity. Blood leucocytes which have been separated from plasma and cultured in fibrin are incubated in contact with various bacterial filtrates. If the slide cultures are necrotic, the test is considered positive and if viable, the test is negative. The authors have treated seventeen cases of bacterial asthma with the sterile broth filtrates of the bacteria to which the patients had been found sensitive. Two cases, both of whom have been asymptomatic for several months while on this regime, are presented in detail. F.

Dermatology

Papular Urticaria. Its Response to Treatment With DDT and the Role of Insect Bites in Its Etiology. Shaffer, B., Spencer, M. C., and Blank, H.: J. Invest. Dermat. **11**: 293, 1948.

Sixty-nine patients with papular urticaria were studied. The majority of patients were between the ages of 2 months and 13 years. The disease usually appeared in March, reached its peak in June, July, and August, and disappeared by October. Fifty-five of sixty-six patients were found to have been exposed to fleas and bedbugs. DDT powder in various vehicles was prescribed for forty-one of these patients who were told to apply it topically three times a day. Patients were also advised to exterminate insects. Of thirty-three patients seen after one week or more of therapy, thirty-one were considered cured. The average period of time for cure was 2.3 weeks. For comparison, the records of eighty-eight cases of papular urticaria treated by other methods were examined. In this group, only nineteen were classified as cured, the average period of time for cure being 10.9 weeks.

Intracutanous tests with 0.1 c.c. of flea and bedbug antigen were performed and read after forty-eight hours. Fifteen of seventeen normal children and all of the eleven normal adults tested showed negative reactions to

the flea antigen. Negative reactions were obtained with bedbug antigen in all normal individuals tested. Among the patients with papular urticaria, twelve of sixteen gave positive reactions to the flea antigen, and three of ten were positive to the bedbug antigen. Negative tests obtained with silk antigen and Coca's solution ruled out nonspecific reactivity of the skin.

There is a definite increase in the incidence of fleas during the months of July, August, and September. Bedbugs do not have a seasonal incidence.

B. SIEGEL.

Contact Dermatitis From Topical Tyrothricin and Associated With Polyvalent Hypersensitivity to Various Antibiotics. Report of a Case. Goldman, L., Feldman, M. D., and Altemeier, W. A.: J. Invest. Dermat. **11**: 243, 1948.

A forty-three-year-old woman was admitted to the hospital with an acute eczematoid dermatitis of the left leg and foot. One and one-half years before admission, she was successfully treated for an ulcer of her left ankle by topical applications of tyrothricin solution. Twenty years previously the patient had had bilateral thrombophlebitis of the legs. There was no history of eczematoid dermatitis, fungous infection, or use of any antibiotics other than those mentioned. The ulcer recurred two and one-half months prior to admission to the hospital. Tyrothricin solution was again used, but an acute eczematoid dermatitis soon developed. Penicillin ointment was then substituted, which further aggravated the dermatitis. Besides the edematous, erythematous, eczematoid lesions of the left leg and foot, there was an erythematous papulovesicular eruption of the upper extremities. Patch tests were positive with tyrothricin solution, penicillin G solution and penicillin ointment, gliotoxin cream and ointment, and bacitracin. Intracutaneous tests were positive to penicillin G, histoplasmin, trichophytin, oidiomycin, streptomycin, and bacitracin. It is suggested that this is a case of polyvalent hypersensitivity to various antibiotics associated with and/or initiated by a contact dermatitis due to tyrothricin. B. SIEGEL.

Contact-Type Sensitization to Antibiotic Agents. Bencke, M., and Obermayer, M. E.: J. Invest. Dermat. **11**: 253, 1948.

Patch tests with streptomycin, penicillin, tyrothricin, and procaine hydrochloride were performed on fifty-one nurses. All subjects had had contact with streptomycin and penicillin, most of them handled procaine, and a few had contact wtih tyrothricin. Twenty subjects showed positive reactions to streptomycin, twenty to procaine hydrochloride, thirteen to penicillin, and two to tyrothricin. Of the twenty who demonstrated a positive patch test to streptomycin, thirteen gave a previous history of eczema. Nine of the subjects with eczematous lesions reacted to other agents. Of the six nurses who reacted to streptomycin alone, four had recently had eczematous dermatitis from contact with this drug. Fourteen of the twenty streptomycin sensitive subjects also reacted to procaine hydrochloride and/or penicillin. It was concluded that streptomycin is an important contact-type sensitizing agent. However, procaine hydrochloride which is used with streptomycin may also be responsible for the reactions. B. SIEGEL.

Contact Dermatitis From Beetles, With a Report of a Case Due to the Carpet Beetle (Anthrenus Scrophulariae). Cormia, F. E., and Lewis, G. M.: New York State J. Med. **48**: 2037, 1948.

A bizarre type of dermatitis in a forty-seven-year-old woman was traced to contact with the larval form of the common carpet beetle, Anthrenus scrophulariae L. The rash involved the exposed surfaces of the body and was characterized by papulovesicular lesions with underlying erythema, punctate crusting,

and edema. Patch tests made with saline extracts of ground larvae were negative. When a decapitated larva was placed with its back in contact with a previously involved skin area on the flexor surface of the forearm, bright red papules developed at the test site within four minutes. The papules increased in size and became urticarial, and older papular lesions on the neck and other distal sites flared up. When hairs from the larva were applied on the opposite arm to an area free of dermatitis, satellite papules and a minor distal exacerbation appeared, but the reactions were less marked than in the previous experiment. The carpet beetle has no primary toxic effect on normal skin. The papular, urticarial, and vesicular lesions of the original dermatosis and the experimentally produced lesions were due to hypersensitivity to the larval hairs. C.

Dermatitis Resulting From Contact With Moths (Genus Hylesia). Hill, W. R., Rubenstein, A. D., and Kovacs, J., Jr.: J. A. M. A. **138**: 737, 1948.

An outbreak of dermatitis occurred in thirty-one of forty-five sailors who had been exposed to a swarm of moths in Venezuela. The skin manifestations occurred within a few minutes to several hours after exposure. The dermatitis lasted four to seven days and was caused by contact with the abdominal hairs of the female moth of the genus Hylesia. Positive patch tests were obtained with these hairs. F.

A New Adhesive Tape Remover of Particular Value in Patch Testing. Glick, A. W., Weissberg, G., and Peck, S. M.: J. Invest. Dermat. **10**: 399, 1948.

Comparative patch tests were performed with a special adhesive containing fatty acid salts, with ordinary hospital adhesive, and with a popular brand of prepared patches. The tackiness was best in the special adhesive and slightly less in the hospital adhesive. The prepared patches fell off in more than 30 per cent of the patients. However, the better the tackiness of the adhesive, the greater the traumatic effect of its removal. It was found that the incidence of the traumatic reaction of removal was definitely reduced by the use of propylene glycol ethyl ether as an adhesive tape remover. B. SIEGEL.

Contact Dermatitis Due to "Finger Paints." Tobias, N.: J. A. M. A. **137**: 535, 1948.

An 8-year-old boy developed an acute erythematovesicular dermatitis in the interdigital spaces of the right hand, four days after first using "finger paints." Three days later, the dermatitis had spread to include the dorsal surface of the hand, right cheek, forehead, and the left forearm, the paints having been used continually during this period. A patch test with the paint gave a three-plus reaction in twenty-four hours. It is believed that the plasticizer in the paint is the causative factor. F.

Exfoliative Dermatitis Due to Codeine. Moyer, J. H., Jr.: New England J. Med. **238**: 469, 1948.

Drug eruptions caused by sensitivity to codeine are rare. An exfoliative dermatitis due to this drug is reported. The rash consisted of a generalized macular erythematous eruption with superimposed purpuric urticaria and papulo-pustules on the face. The dermatitis was accompanied by fever up to 104° F. Generalized desquamation followed. Patch tests with codeine were negative. Intracutaneous injection of a 1:10,000 solution of codeine caused a local and generalized urticaria and a fine punctate pustular rash on the face twenty-four hours later. A transient eosinophilia (11 per cent) was noted at the height of the illness. H.

The Use of Calcium Ointment in Dermatology. Tobias, N.: J. Invest. Dermat. **10**: 229, 1948.

One hundred thirty-six cases of subacute and chronic contact dermatitis, atopic eczema, and localized neurodermatitis were treated with a 10 per cent calcium gluconate ointment in a water soluble base. Eighty-two of these cases had had other types of therapy with no improvement. Marked or moderate improvement with the calcium ointment was noted in 79.6 per cent of the patients with contact dermatitis, 94.3 per cent of those with atopic eczema, and 80 per cent of the patients with localized neurodermatitis. Twenty-six patients treated with the water soluble base alone showed no response. The ointment was well tolerated in all cases. B. SIEGEL.

Otorhinology and Ophthalmology

Nonregeneration of the Mucous Membrane of the Frontal Sinus After Its Surgical Removal (in the Dog). Lieberman, G. E., and Babb, J. W.: Arch. Otolaryng. **47**: 421, 1948.

Regeneration of mucous membrane is said to take place both in animals and in man after surgical removal of the membrane. The authors removed the mucous membrane from the frontal sinus in ten dogs and re-examined the sinuses two weeks, one month, two months, three months, and four months later. Six of the dogs tolerated the operative procedures well and were in good condition at the end of one year. In no instance was regeneration of the mucosa observed. The lining of the sinus was composed entirely of heavy fibrous connective tissue and there was no evidence of epithelium or mucosa. No inflammatory exudate was present. It is likely that the investigators who had reported regeneration of mucosa had left behind islands of mucous membrane. C.

Sulfathiazole Sensitivity. Albright, A. A., and Seretan, E. L.: Am. J. Ophth. **31**: 1603, 1948.

A wounded soldier who had been previously treated with sulfanilamide was given instillations of 5 per cent sulfathiazole ointment in the conjunctival sac. Within twenty-four hours he developed local and generalized reactions which included edema and chemosis of both eyes, generalized urticaria and itching, necrosis of wounds formerly treated with sulfanilamide, and a fall in blood pressure. The ophthalmic reaction subsided following the use of topical adrenalin and Benadryl, but the edema of the eye persisted for three weeks. C.

Allergic Reaction of Previously Sensitized Eye to Parenteral Penicillin. Wilson, J. E.: Am. J. Ophth. **31**: 1490, 1948.

Two patients had been successfully treated for acute conjunctivitis with local instillation of penicillin and no untoward reactions. Subsequent parenteral administration of penicillin for treatment of nonocular infection was followed by swelling of the eye which had previously received local penicillin therapy. C.

Antistine in Ocular Allergy. Hurwitz, P.: Am. J. Ophth. **31**: 1409, 1948.

Eighty-four per cent of fifty cases of ocular allergy experienced subjective symptomatic improvement following the local use of Antistine ophthalmic solution. The greatest benefit occurred in ragweed hay fever patients. The pathologic processes were not objectively altered in the majority of the patients treated, but there was a decrease in the edema, hypertrophy, and folliculosis. Symptomatic relief was obtained in four cases of vernal catarrh although there

was no improvement in the lesions. All the cases treated were primarily extraocular allergies. No attempt was made to treat intraocular allergic conditions.
C.

Miscellaneous Allergies

Suppression of Local Tissue Reactivity (Shwartzman Phenomenon) by Nitrogen Mustard, Benzol, and X-Ray Irradiation. Becker, R. M.: Proc. Soc. Exper. Biol. & Med. **69**: 247, 1948.

The Shwartzman phenomenon was induced in over 90 per cent of the rabbits injected with Meningococcus endotoxins and filtrates. Various drugs in near lethal doses failed to prevent the onset of the reaction. These drugs included Benadryl, urethane, penicillin G, crude penicillin, streptomycin, British antilewisite, sodium ascorbate, alpha tocopherol, protamine, toludine blue, and Mapharsen.

Total thyroidectomy three weeks before the injection of the intravenous reacting factor or bleeding for two days prior to the reaction had no suppressive effect. When rabbits were exposed once to 800 R total body irradiation three to seven days before injection of the intravenous reacting factor, there was marked suppression of the reaction in every instance. However, if smaller amounts of irradiation were given or the time interval between the irradiation and the intravenous injection was less than three days, the reaction was not suppressed. Benzol, given for a period of seven to thirteen days prior to the injection of the intravenous reacting factor until symptoms of toxicity occurred, completely suppressed the reaction. When a single dose of nitrogen mustard was injected three to four days prior to the intravenous injection, the Shwartzman reaction was completely suppressed. It is postulated that the suppression by these agents is effected through their action on the reticuloendothelial system, primarily the vascular endothelium.
R. WISEMAN.

Passive Transfer of Local Cutaneous Hypersensitivity to Tuberculin. Metaxas, M. N., and Metaxas-Buhler, M.: Proc. Soc. Exper. Biol. & Med. **69**: 163, 1948.

A recently isolated virulent strain of *Mycobacterium tuberculosis* was injected subcutaneously into guinea pigs. After three to seven weeks the animals showing the strongest reactions to skin tests with OT were selected for the production of the peritoneal exudate. Two tuberculous and two normal cell donors were used for each experiment. The animals received 30 c.c. of paraffin oil intraperitoneally and forty-eight hours later the peritoneal cavities were flushed out. Most of the cells in the exudate were found to be either monocytes or lymphocytes.

Approximately 0.04 c.c. of the washed tuberculous and normal exudate cells suspended in 0.1 c.c. of solution were separately injected intracutaneously into opposite flanks of a guinea pig. Forty-eight hours later a markedly indurated erythematous reaction 5 to 9 mm. in diameter developed at the sites. Direct tests with OT at this time gave positive reactions at all sites including the controls. Hence, this technique was abandoned for one in which the OT was given both subcutaneously and intraperitoneally. The reactions at the skin sites prepared with tuberculin cells became well developed sixteen hours after the tuberculin tests and usually reached their peak in twenty-four hours. The reactions were small but typical with a central indurated livid area, and a surrounding area of erythema. After the introduction of tuberculin no change was observed at the control sites. Local reactivity was found to last at least five days, but there was a latent or refractory period for at least forty-eight hours before the skin sensitivity became manifest.
R. WISEMAN.

Allergic Factors in Gout. Harkavy, J.: J. A. M. A. **139**: 75, 1949.

Certain features of the acute gouty seizure such as its sudden explosive nature, the reversibility of the reaction (especially in the early stages), and the elicitation of symptoms by the ingestion of certain foods or alcoholic beverages, suggest an allergic etiology. The present report deals with three gouty patients whose attacks were induced by sensitization to foods, pollens, and infection. The first patient gave a long-standing history of periodic swelling of the knees, ankles, wrists, and elbows, which were worse during the early summer and fall. Skin tests disclosed positive reactions to a number of foods and inhalants, among which were timothy and ragweed pollens and wheat. Ingestion of wheat induced a moderate attack of monoarticular gout with a rise in uric acid. Ingestion of wheat plus a subcutaneous injection of timothy or ragweed pollen extract resulted in severe polyarticular gout accompanied by elevation of uric acid. Combined injections of small amounts of ragweed and timothy during the grass season induced similar seizures. Separate inoculation of either ragweed or timothy administered while the patient was on a wheat-free diet failed to produce any arthritic phenomena.

A second patient had attacks of gout most marked in the spring and summer, often preceded by head colds and wheezing. Positive skin reactions were present to timothy, ragweed, and tree pollens, and to certain foods. On several occasions joint symptoms occurred after injections of mixed tree extract and timothy extract. Gout also accompanied attacks of ragweed hay fever.

A third patient, with symptoms of hay fever, vasomotor rhinitis, and chronic sinusitis associated with bouts of gouty arthritis and hyperuricemia, was found sensitive to various allergens. Her joint symptoms occurred during the grass and ragweed seasons and on one occasion during the spring of the year after the ingestion of milk. Improvement followed elimination of the foods to which she was sensitive and immunization with the specific pollens and dust. F.

On a Source of Error in Intradermal Trichophyton Testing. Response to Tritrophyton of Tuberculin-Positive Subjects With or Without Clinical Tuberculosis. Falk, C. A.: Acta dermat.-venerol. **28**: 342, 1948.

The results of tests with a polyvalent trichophyton preparation (Behring 1:15 dilution) revealed a striking parallelism with the response to the tuberculin test in the same patient. Positive cutaneous reactions to trichophyton could be obtained in subjects without past or present hyphomycetic infection. These results indicate the limited value of the trichophyton test. The author does not consider a positive trichophyton test significant even in infants unless the tuberculin test is negative. The trichophyton test was positive in 90.6 per cent of cases of lupus vulgaris and was consistently positive in cases of erythema induratum. H.

The Use of Coccidioidin. Smith, C. E., Whiting, E. G., Baker, E. E., Rosenberger, H. G., Beard, R. R., and Saito, M.: Am. Rev. Tuberc. **57**: 330, 1948.

The preparation of coccidioidin antigen is discussed in detail. The antigen is thermostabile and may be kept undiluted for at least nine years. Antigenic potency varies regardless of technique so that biologic standardization is necessary. Cutaneous tests with stock and autogenous preparations indicate that the antigen is not strain-specific. Skin reactions were of the delayed tuberculin type. Immediate wheal-erythema reactions occurred only in persons who did not show the delayed type of reaction. Passive transfer tests in the delayed type of reaction were uniformly negative. The appearance of a coccidioidin response may antedate or postdate the onset of clinical illness and tends to persist for

years. Occasionally coccidioidin skin testing precipitated erythema nodosum in acutely ill patients. Patients with erythema nodosum and coccidioides were found to be highly sensitive to coccidioidin skin tests. Patients with disseminated progressive coccidioidal disease frequently reacted feebly or not at all to coccidioidin. If sensitivity is maintained, the clinical outlook is more favorable. Re-establishment of cutaneous sensitivity during convalescence or after recovery has been observed six times. Attempts to sensitize five medical students by repeated injections of coccidioidin failed to induce cutaneous reactivity. Other observations in man and guinea pigs confirm the low (nonexistent?) antigenicity of this material. K.

Dermal Hypersensitivity to Toxoplasma Antigens (Toxoplasmins). Frenkel, J. K.: Proc. Soc. Exper. Biol. & Med. **68**: 634, 1948.

Peritoneal exudates from infected hamsters and mice were found to be the most preferable source of antigen for skin testing because of high yield and lower carrier protein content. Assays in guinea pigs with chronic latent toxoplasmosis, known human toxoplasmin reactors, and normal controls proved the reactions to be highly specific. A 1:1,000 to 1:10,000 dilution of the peritoneal exudate was suitable for use in human beings. The reaction to an intracutaneous test was of the delayed tuberculin type and was read at the end of forty-eight hours. There was a close correlation between skin hypersensitivity and the presence of neutralizing antibodies. False positive skin tests were not seen. False negative skin tests were occasionally noted. Repeated skin tests on patients with negative reactions did not induce neutralizing antibodies. However, patients with positive skin reactions frequently showed an anamnestic rise in neutralizing antibody titer. The incidence of toxoplasmin reactors in an unselected young adult group was found to be 10 per cent. In an older age group, the incidence was 28 per cent. It was interesting to note that in a group of twenty-eight young patients with chorioretinitis, 71 per cent showed positive toxoplasmin reactions. There was also a high incidence of toxoplasmin sensitivity in the mothers of such patients. On the whole, the toxoplasmin skin test is considered to be simpler and more sensitive than the neutralizing antibody test for the diagnosis of past or latent toxoplasmosis. B. SIEGEL.

The Effect of Pyribenzamine in Beeswax on Experimental Meningoencephalomyelitis in the Guinea Pig. Alvord, E. C., Correll, J. W., Ladd, A., and Kellner, A.: J. Immunol. **60**: 345, 1948.

Sixty-six guinea pigs were injected subcutaneously with varying amounts of a water-in-oil emulsion of whole fresh guinea pig brain and heat-killed tubercle bacilli. In spite of weekly subcutaneous implantations of 500 mg. Pyribenzamine pellets in beeswax, twenty of thirty animals eventually developed typical meningoencephalomyelitis. Sixty-eight per cent of the guinea pigs in the control group also developed the disease. If one accepts the theory that meningoencephalomyelitis is caused by histamine liberated as a result of an allergic reaction, it becomes necessary to assume that the histamine acts in a manner which is not influenced by antihistaminic drugs. R. WISEMAN.

Stool Eosinophilia in Gastrointestinal Allergy of Infancy. Nance, F. D.: J. Pediat. **33**: 313, 1948.

The presence of eosinophilia in the stools may be a valuable aid in the recognition of gastrointestinal allergy in infants. Reports are presented of eleven cases of gastrointestinal allergy with stool eosinophilia. In one group of patients, the symptoms simulated pyloric stenosis, in another celiac disease. In

other groups symptoms were colic, colic and diarrhea, or diarrhea and vomiting. Milk was the offender in all instances except one. All patients promptly got well on elimination of the of the offending foods. J. S.

Anaphylaxis

Anaphylaxis in the Fish. Dreyer, W. B., and King, J. W.: J. Immunol. **60**: 277, 1948.

Four species of teleost fish were studied. Fish were given intraperitoneal injections of 0.2 ml. of horse serum and reinjected with 0.1 ml. fifteen days later. Their swimming became agitated and they bumped against the sides of the tank. Within a few seconds the fins fanned and then folded tightly against the body. There was an increase in excursions of the gill clefts. The fish found difficulty in maintaining themselves upright. When these symptoms subsided, the fish sank to the bottom of the aquarium, appeared sluggish, and refused food for several hours. Within twelve hours they appeared to have fully recovered. There were no lethal reactions. Unsensitized control fish showed no reactions to the shock dose. Fish sensitized to egg albumen showed typical shock reactions when tested one month later. Shock symptoms could not be produced when the incubation period was less than ten days. Sensitized fish could be shocked repeatedly, but the symptoms could not be produced regularly if the interval between shocking injections was less than five days.

When normal fish were injected with 0.1 ml. of histamine phosphate solution containing 10 μg of histamine base, all showed typical shock symptoms. However, the reaction began more abruptly and disappeared more rapidly than in the anaphylaxis experiments. With less than 10 μg of histamine as the shocking dose, reactions occurred irregularly.

Both epinephrine and ephedrine had inhibiting effects on the shock reactions.

Antihistaminic drugs injected intraperitoneally before and after shocking doses of histamine or antigen had little effect on shock reactions. Fish anesthetized with urethane showed diminished shock responses.

Hypersensitivity could not be demonstrated in frogs. Schultz-Dale phenomena could not be demonstrated on isolated frog and fish heart and muscle preparations.

The nature of the shock-organ in the fish has not been determined.

B. Siegel.

Identification of Histamine in the Blood by Paper Chromatography. Urbach, K. F., and Giscafre, L.: Proc. Soc. Exper. Biol. & Med. **68**: 430, 1948.

Paper chromatography is a method of identifying minute amounts of a substance on filter paper strips. With a slightly altered technique and the use of control paper exposed to known amounts of histamine for comparison, it was demonstrated that increased amounts of histamine were present in butanol extracts of plasma after the addition in vitro of antigen to the blood of sensitized rabbits. In a similar manner it was also shown that the blood histamine level was elevated in dogs in anaphylaxis. In all experiments there was a close correlation between the amounts of histamine found by paper chromatography and the biological assay of the plasma extracts which were tested on guinea pig ileum. R. Wiseman.

The Mechanism of Arterial Hypotension During Anaphylactic and Histaminic Shock in the Rabbit. Vallery-Radot, P., Halpern, B. N., and Mauni, G.: Acta Allergologica **1**: 85, 1948.

Anaphylactic shock in the rabbit is characterized by a generalized drop in arterial blood pressure and a constant and significant rise in pressure in the

pulmonary artery. Pulmonary vasoconstriction does not appear to be the only cause of the drop in blood pressure because the two phenomena seem to be independent of one another. Histamine, even in small doses, causes a marked rise in pressure in the pulmonary artery of the rabbit and a concomitant drop in pressure in the pulmonary vein. The changes in the pulmonary circulation do not, however, affect the pressure in the carotid artery. Hypertension in the pulmonary artery, following an injection of histamine, is not due to a sudden increase in cardiac output because it can be reproduced in perfused rabbit lungs. Antihistaminic drugs totally suppress the histamine effect on the pulmonary circulation. Following the injection of antihistaminic drugs, there is, however, a drop in carotid pressure. C.

Present Status of Fever Therapy. Bierman, W.: Arch. Phys. Med. **29**: 408, 1948.

Artificial fever gives only transient benefit to asthmatic patients, but when the intake of salt is restricted, fever therapy affords more relief.

The specific antibody response in rabbits was impaired when artificial fever was induced during immunization. Rabbits, either actively or passively immunized against Eberthella typhosa, showed a rapid reduction of antibody titers when subjected to high fever.

Sensitized guinea pigs were protected from anaphylactic shock by high fever. A temperature of 108° F. did not protect guinea pigs if the shock dose was injected as soon as this temperature was attained. However, if the fever was maintained for thirty minutes, some protection was afforded. Temperatures of 109° and 110° F. afforded complete protection. Young guinea pigs were not as readily protected as old ones. J. S.

Effect of Adrenocorticotrophic Hormone on Anaphylaxis in the Guinea Pig. Leger, J., Leith, W., and Rose, B.: Proc. Soc. Exper. Biol. & Med. **69**: 465, 1948.

Guinea pigs, sensitized to horse serum, were divided into two groups. One group was given adrenocorticotropic hormone six to eight hours prior to the shocking dose of the antigen. The other group constituted the control. The number of animals showing fatal and severe anaphylactic shock was similar in both groups. It was concluded that adrenocorticotropic hormone, in the dose administered, did not have any effect on anaphylactic shock in guinea pigs.

B. SIEGEL.

Pharmacology and Physiology

The Influence of Lung Distention Upon the Response of the Bronchioles to Epinephrine and to Histamine. Melville, K. I., and Caplan, H.: J. Pharmacol. & Exper. Therap. **94**: 182, 1948.

Histamine was administered intravenously or by inhalation to pentothal anesthetized, vagotomized dogs. Epinephrine counteracted the hypotension in these animals but was only partially effective in producing bronchodilatation (measured by Jackson's chest-plate method). Following epinephrine, forcible distention of the lungs by air under positive pressure (up to 40 mm. of mercury) led to definite and sustained bronchodilatation. Lung distention without previous epinephrine administration was only partially effective. However, when the bronchoconstrictor action of histamine was partially abolished by lung distention, the subsequent effect of epinephrine was considerably potentiated. After the first or second doses of epinephrine, subsequent administrations failed to

relax the bronchioles. Lung distention prior to the administration of histamine inhibited bronchoconstriction although the hypotensive effects were not antagonized. Histamine sprayed into the bronchi was less effective than when given intravenously. Conversely epinephrine sprayed into the bronchi was much more effective in relaxing them but had less pressor effect than when injected.

After the circulation had completely ceased, lung distention was still capable of inducing several minutes of bronchiolar distention. It is suggested that the effects of lung distention are due chiefly to mechanical stretching of the elastic tissue of the lungs. K.

Studies on Blood Histamine: Partition of Blood Histamine Before and After Clotting in Health and Disease States. Valentine, W. N.: Am. J. M. Sc. **216**: 619, 1948.

The myeloid leucocytes were again demonstrated to be the principal repository of blood histamine. Coagulation of the blood was not followed by the appearance of any appreciable amounts of histamine in the serum. In individuals with myelogenous leucemia enormous differences were observed between the histamine content of whole blood and of serum. Defibrination of blood caused little difference in the histamine content of the myeloid leucocytes.

Studies on nonallergic patients suffering from various disease states revealed little correlation between the leucocyte count and the blood histamine level. The individual cells in such conditions as myeloid leucemia may contain much more histamine than normal cells, but whether this is limited to certain stages of cell development or applies generally could not be ascertained. The myeloid leucocytes of patients suffering from myelogenous leucemia and perhaps even of normal individuals contain enough histamine to produce significant clinical effects if suddenly released in the blood stream.

It is possible that in localized pyogenic infections, the cardinal signs of inflammation may be due in part to the breakdown of large numbers of myeloid leucocytes with local liberation of histamine. In the so-called "cold abscess" in which nonhistamine containing mononuclear cells predominate, the picture differs markedly from the inflammatory reaction in which the granulocytes predominate. F.

The Combined Effect of Potassium Iodide and Streptomycin on Established Tuberculosis in Guinea Pigs. Woody, E., Jr., and Avery, R. C.: Science **108**: 501, 1948.

Iodides may cause tubercle bacilli to appear in the sputum of patients with pulmonary tuberculosis, presumably by a lytic effect of this drug on caseous lesions. This observation suggested the use of this drug in the treatment of caseous tuberculosis to make the tubercle bacilli more accessible to the influence of streptomycin. It was first determined that potassium iodide had no effect on the antibiotic potency of streptomycin in vitro. Virulent tubercle bacilli were then injected into the groins of young guinea pigs. Twenty-one days after inoculation, one group was treated with potassium iodide, one with streptomycin, one with both streptomycin and potassium iodide, and one group received no treatment. After four weeks of therapy, all animals were sacrificed. The guinea pigs treated with potassium iodide and the controls showed marked tuberculous infection of all the viscera. Five of the ten guinea pigs treated with streptomycin showed spread of infection to the organs. However, in the streptomycin-potassium iodide treated group, the organs were entirely free from infection.

In another series of similar experiments, treatment was delayed until the fourth week of infection and continued for a period of five weeks. At the end

of the twelfth week of infection, thirteen of fifteen control animals were dead. Five of the fifteen streptomycin treated animals died, but only one in sixteen of the streptomycin-potassium iodide-treated group succumbed. B. SIEGEL.

Protective Action of an Antihistaminic Derived From Thiodiphenylamine Against Experimentally Induced Acute Pulmonary Edema. Halpern, B. N., Hamburger, J., and Cruchaud, S.: Acta Allergologica **1**: 97, 1948.

Sixty-three per cent of twenty-seven rabbits died in acute pulmonary edema within ten minutes following an intravenous injection of adrenalin hydrochloride in doses of 0.25 to 0.35 mg. per kilogram of weight. Fifteen rabbits similarly injected but pretreated thirty to sixty minutes before with a subcutaneous injection of N-dimethylamino-2-propyl-1-thiodiphenylamine (RP 3277), in doses of 20 mg. per kilogram, all survived. In these animals histologic section showed very slight evidence of pulmonary edema. Acute pulmonary edema was then induced in seven unprotected animals. After dyspnea had begun, the antihistaminic drug was injected intravenously. All the animals survived and histologic section showed normal lungs. It was concluded that RP 3277 is capable of preventing acute pulmonary edema induced in the rabbit by the intravenous injection of adrenalin. The drug is believed to act on the permeability of the pulmonary capillaries. C.

The Present Status of Synthetic Antihistaminic Drugs. Halpern, B. N.: Acta Allergologica **1**: 3, 1948.

The pharmacology of various antihistaminic drugs is reviewed. N-dimethylamino-2-propyl-1-thiodiphenylamine (RP 3277) is the most active of the synthetic drugs. It protects guinea pigs against 1,500 lethal doses of histamine and the duration of its action is three times that of other antihistaminic drugs. It neutralizes the effects of histamine on the circulation and in small doses suppresses the skin reactions of histamine in man, both direct and indirect. It raises capillary resistance and prevents pulmonary edema provoked by adrenalin. It does not affect the excito-secretory actions of histamine. Its action as a local anesthetic is four to five times greater than that of cocaine. C.

The Absorption and Circulation of Antigen Elucidated by Transfusion Experiments. Dencker, F., and Schwartz, M.: Acta Allergologica **1**: 114, 1948.

Fasting blood donors were each fed 15 Gm. soybean meal in 50 c.c. of water. Transfusion recipients were each passively sensitized locally with 0.05 c.c. of a high-titered serum from a soybean-sensitive patient. A total of twenty-one transfusions each of 500 c.c. of blood were carried out. Lighting-up of the sensitized sites occurred in three of four recipients when the transfusion was given within fifteen to thirty minutes after the test meal. In two cases, when the transfusion was given in less than fifteen minutes, there was no reaction. Antigen was still present in the transfused blood up to three hours after transfusion, but not thereafter. Soybean meal could be boiled for five minutes without losing its antigenic effects. H.

Prolonged Protection of Guinea Pigs Against Histamine by Means of Pellets of Pyribenzamine in Beeswax Implanted Subcutaneously. Kellner, A., Correll, J. W., Ladd, A. T., and Alvord, E. C.: J. Immunol. **60**: 339, 1948.

Pellets containing 500 mg. of Pyribenzamine in beeswax were implanted subcutaneously into fourteen guinea pigs. Upon exposure to lethal doses of

intravenous histamine, thirteen animals were protected for seven days, six animals for ten to eleven days, and three animals for sixteen to seventeen days. Control animals treated with beeswax alone died promptly of typical respiratory distress following intravenous histamine. Within five minutes after the histamine injections the protected animals became lethargic, but in most cases recovery ensued. However, eight of fourteen of these pigs eventually died of central nervous system depression and not of respiratory distress. After removal of the Pyribenzamine pellets on the sixteenth day, the animals responded to histamine in a manner similar to the controls. R. WISEMAN.

Tolerance Studies of the Antihistamine Drug Thephorin. Boyd, L. G., Weissberg, J., and McGavack, T. H.: New York State J. Med. **48**: 1596, 1948.

Thephorin was administered orally to 100 nonatopic subjects in daily doses varying from 75 to 600 mg. for periods of one to four weeks. Forty-two of the subjects developed one or more toxic symptoms such as insomnia, drowsiness, dizziness, nervousness, dryness of the mouth, burning of the eyes, constipation, cramps, anorexia, nausea, palpitation, or flushing. With smaller doses insomnia was the most frequent side reaction, while larger doses most often caused dryness of the mouth. No significant changes were produced in the electrocardiogram, the nonprotein nitrogen of the blood, the peripheral blood count, or the urine. When compared with Benadryl and Pyribenzamine, Thephorin is less toxic weight-for-weight in daily doses ranging from 150 to 600 milligrams. C.

A Case Report of Drug Delirium Clinically Interpreted as Being Due to Pyribenzamine. Lopp, G. M., Grug, E. S., and Glenn, H. R.: Journal-Lancet **68**: 342, 1948.

A 20-year-old woman developed acute delirium with delusions and hallucinations approximately forty-eight hours after the institution of Pyribenzamine therapy for drug dermatitis. Neurological examination was negative. Discontinuance of the drug was followed within twelve hours by complete disappearance of the symptoms. F.

The Influence of Diphenhydramine Hydrochloride and Epinephrine on Glucose Metabolism in the Rabbit. Chen, G., and Clarke, I. G.: J. Pharmacol. & Exper. Therap. **93**: 175, 1948.

Diphenhydramine hydrochloride (Benadryl) caused a rise in blood glucose in nonanesthetized rabbits but not in anesthetized animals. Anesthesia alone did not affect the blood sugar level. Epinephrine caused the same hyperglycemic curve regardless of anesthesia. When epinephrine and Benadryl were administered simultaneously, the response was additive in unanesthetized animals. However, in anesthetized rabbits only the adrenalin response was elicited. It was concluded that the hyperglycemic effect of Benadryl is due to central nervous stimulation. K.

The Potentiating Effect of Antihistaminic Drugs Upon the Sedative Action of Barbiturates. Winter, C. A.: J. Pharmacol. & Exper. Therap. **94**: 7, 1948.

Small doses of antihistaminic drugs do not induce drowsiness in animals. Large toxic doses produce excitation. Groups of mice were given a constant dose of Evipal alone or in combination with Pyribenzamine, Neo-Antergan, Benadryl, or "3277 R.P." in doses of 10 mg. per kilogram. The awakening time was found to be prolonged about 40 per cent by Benadryl or "3277 R.U.," and about

10 per cent by Pyribenzamine or Neo-Antergan. Similar results were obtained when nembutal was the hypnotic and when the test animal was the guinea pig. K.

A Study of the Pharmacological Relationhip Between Digitoxin and Histamine. Sjoerdsma, A., and Kim, E.: J. Pharmacol. & Exper. Therap. **94**: 53, 1948.

In guinea pigs, digitoxin and histamine act synergistically both in their lethal effects and in contracting the isolated guinea pig ileum. Histamine has a diphasic action on the coronary outflow of isolated hearts, the initial phase being dilatation in cats, guinea pigs, and rats, and constriction in rabbits. K.

The Effect of Adrenergic Blocking Agents on the Vasoconstriction Produced by Acute Oxygen Lack. Marsh, D. F., and Van Liere, E. J.: J. Pharmacol. & Exper. Therap. **94**: 221, 1948.

The blood pressure of dogs anesthetized with barbital rises when they are subjected to an atmosphere containing from 5 to 9 per cent oxygen. Carbon dioxide was not allowed to accumulate in the inhaled mixture. The injection of epinephrine or ephedrine normally causes a further pressor effect in these animals. Administration of adrenergic blocking agents such as ergotamine tartrate, yohimbine hydrochloride, piperidinomethylbenzodioxan sulfate, or alpha-naphthylmethylethyl-beta-chloroethylamine hydrochloride, causes a fall in blood pressure of the anoxic animals. Doses of ergotamine which are too small to reverse the action of epinephrine still can inhibit and reverse the anoxic anoxia rise in blood pressure. It is suggested that ergotamine blocks the carotid sinus reflexes. Doses of the other blocking agents, sufficient to reverse the action of epinephrine, but not that of ephedrine, do not effectively antagonize the anoxic anoxia rise, while doses large enough to counteract the ephedrine effects, effect the pressor response to anoxic anoxia as well. K.

Histological Evidence for the Synthesis of Protein in Lymphocytes Following Parenteral Injection of Antigen. Harris, T. N., and Harris, S.: Proc. Soc. Exper. Biol. & Med. **69**: 18, 1948.

Influenza virus was injected into the pads of one foot in a series of rabbits. From one to four days later the popliteal nodes were excised from the treated and untreated feet and were treated with special stains containing methyl green and pyronine to demonstrate the quantity of nucleic acid present in the cells. Microscopic sections of the normal lymph nodes revealed no increase in staining properties, whereas sections of the nodes presumably engaged in the production of antibodies showed definite changes. A wide range of lymphocytes, largely the younger forms, were found to have cytoplasmic granules and nucleoli which contained increased amounts of ribonucleic acid. Since this substance is a building stone for the production of immune globulin, it is suggested that a new method may now be available for the study of antibody formation. R. WISEMAN.

Effect of Aminophyllin on the Coagulation of Human Blood. Blood, D. W., and Patterson, M. D.: Proc. Soc. Exper. Biol. & Med. **69**: 130, 1948.

Aminophyllin was administered once intravenously to eighteen patients, and orally four times daily for one week to another group of twelve patients. Clotting and prothrombin times were done before and after administration of the aminophyllin. No statistically significant changes resulted from the use of aminophyllin. R. WISEMAN.

Pharmacology of a New Antihistamine, B-Pyrrolidine-Ethyl-Phenothiazine Pyrrolazote). Vander Brook, M. J., Olson, K. J., Richmond, M. T., and Kuizenga, M. H.: J. Pharmacol. & Exper. Therap. **94**: 197, 1948.

Pyrrolazote was found to be comparable to Pyribenzamine in antagonizing the action of histamine on the guinea pig ileum. It was also effective in protecting guinea pigs against aerosolized histamine. The duration of protection was longer with Pyrrolazote than with Pyribenzamine. Pyrrolazote neither enhanced nor antagonized the pressor effects of epinephrine in cats or dogs. Acute toxicity studies in mice, rats, and rabbits showed that Pyrrolazote was decidedly less toxic than Pyribenzamine. The oral administration of large doses (25 mg. per kilogram) of Pyrrolazote to rats for ten weeks resulted in degenerative fatty infiltration of the liver. A 1 per cent solution was irritating when applied locally and had an anesthetic effect. K.

Miscellaneous

Protective Vaccination Against Tuberculosis With Special Reference to BCG Vaccination. Aronson, J. D.: Am. Rev. Tubere. **58**: 225, 1948.

BCG vaccine was administered to 1,551 American Indians from 1 to 20 years of age, and to 123 newborn infants. At the same time 1,457 Indians and 139 newborn infants were given saline instead of vaccine as controls. The postvaccination observation periods ranged from 6 to 11 years. Six deaths from tuberculosis occurred among the vaccinated Indians and fifty-three deaths among the controls. Four nonvaccinated infants died of tuberculosis, but none of the vaccinated infants developed tuberculosis. Roentgenologic evidence of primary tuberculosis developed in twenty-two vaccinated persons and in 120 controls. Reinfection-type and other tuberculous lesions were found in twenty-one vaccinated persons and in ninety-three controls. K.

Fatal Anuria. The Nephrotic Syndrome and Glomerular Nephritis as Sequels of the Dermatitis of Poison Oak. Rytand, D. A.: Am. J. Med. **5**: 548, 1948.

Poison oak dermatitis may be followed by serious renal disease. The author cites several cases from the literature and presents seven of his own cases which developed nephritis or nephrosis from three days to two months after the onset of the dermatitis. Three of the patients were believed to have had pure lipoid nephrosis, several had symptoms of nephritis and nephrosis, and in two patients the hematuric features of glomerular nephritis were outstanding. In the latter two, and in another case previously reported as periarteritis nodosa following poison oak, a complicating infection appeared to be of etiologic importance. One patient developed fatal anuria.

Secondary infection through broken skin or sensitization are probably causative factors of the renal involvement, rather than a nephrotoxin acting directly on the kidney. It is possible that the products of poison oak incite antigenicity of renal tissue with the consequent formation of autoantibodies. Heterophile antibodies, which were detected in several of the patients in this series, appear to be related to alteration in the serum protein rather than directly to the poison oak or to sensitization phenomena. F.